

JOURNAL OF FARM ECONOMICS

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FOREWORD.

The members of the Executive Committee of the American Farm Economic Association acting under authorization of the association are glad to announce the formation of an editorial staff and publication arrangements for a *JOURNAL OF FARM ECONOMICS*.

This is the first issue of the *JOURNAL* and its advent marks the launching of what is hoped will in time become a worthy contributor to farm management and farm economic literature.

The fundamental purpose of the *JOURNAL* will be to serve those interested in the economic forces and influences as they operate to affect the business of farming.

It will aim to be a seeker for and an expounder of the scientific facts as they are made known and can be classified and interpreted in the interest of sound farm practice.

This is a day of great economic changes, of high tension, of unusual moment to the farming interests, and the scope of present economic trend is such as to place this *JOURNAL*, if it shall assume its greatest responsibility, in a most important position of service.

There are innumerable problems of price, value, cost, profit, supply and demand, legislation, coöperation, utilization of land and capital, and economic tendencies. Each of these is subject to changes due to influences that should be studied, simplified, discussed and understood. With such material the *JOURNAL* will be concerned and with the support of those interested there should be no question of its progress as a vital force in this field.

The editors of the *JOURNAL* can do only a small part in developing such a force. The real makers of its success must be its contributors from the farm management and farm economic ranks, among the

colleges, the extension workers, the county agents and the farmers themselves.

Hence there is mapped out a policy of mutual responsibility among the association's members to contribute as they may be called upon, or, better, as they shall initiate, their ideas of our economic problems.

The finances of any association are usually the sum and substance of its success or failure. The American Farm Economic Association is no exception—it votes with the majority. The condition of its treasury at the end of 1918 and at the present time, with due consideration of its rosy prospects, is such as to allow only a small number of pages in the first issue of the JOURNAL. It means to grow, to increase and prosper and the source of its sustenance need not be more than mentioned. The association needs more members. It must be believed in, talked about, advertised, invested in, and boosted by every legitimate means. This will soon create a larger publication, and will add strength and enthusiasm to our enterprise.

There is no secret as to where or how we stand. This issue goes to about five hundred paid-up members—or rather, it is presumed they will be paid up—soon. We are proud of this, but we are ambitious, just normally so, however, and doubling this membership will be gratifying this ambition. The selling field for this association is unlimited, the economic value is unquestioned, the terms of the investment are unusually low, the one lacking force is that of salesmen.

Therefore, the secretary of the association has suggested the employment of the five hundred members as salesmen of the Idea of the Association with a guaranteed return for the effort expended to obtain one new member each. This return to be paid in installments of this JOURNAL by means of its power derived from a large membership.

While the finances of the association are low, it will be the aim of the Editorial Staff to publish as many of the papers presented at the annual meeting of the association as space will permit.

**PRESIDENT'S ADDRESS,
AMERICAN FARM MANAGEMENT ASSOCIATION,
BALTIMORE, MD., JANUARY 8, 1919.**

G. A. BILLINGS,
OFFICE OF FARM MANAGEMENT.

The unusual demand for food products and the scarcity of farm labor since the war began have given rise to conditions which demand greater concentration of effort on farm management problems. These problems affect the community, the state and the country as a whole and are in a measure sociological; nevertheless, since they bear a close relation to production and to the individual farm, the basic unit of production, they are of vital importance to the economic management of the farm.

There has been no period in the history of this country when economic conditions have changed so rapidly, requiring the most careful thought concerning the organization of farms of different types to meet present day needs, and the changes which may take place after the war; the policy of price fixing of farm products and its bearing on profitable production as compared with the fundamental law of supply and demand; the mobilization of farm labor to produce the supply of food needed; and many other important questions. The cost of producing milk in large dairy regions and the cost of producing wheat as the basis for fixing the minimum price of wheat to the farmers, illustrate the kind of information which has more recently been demanded. The requests for such information point out conclusively that the results from the investigation of farm management problems by state and federal departments should be tabulated, summarized and held in readiness for such requests. Moreover, this information should be put into such shape that it may be given to the farmer by extension workers as suggestions for adjusting his system of farming to meet these changing conditions.

In normal times the ratio between food production and the increase in population is quite constant. Statistics show that during the last three decades there has been a slight increase per capita in the production of wheat and corn, due in part to the cultivation of more land, but also to more intensive methods of farming. Under such

conditions the demand for greater production has not required serious attention. Farmers have adjusted their business to meet slight changes in economic conditions. The work in farm management has been, mainly, to study the organization of farms and the farm practice in agricultural regions, in order to discover the relationship between farm enterprises and to determine what factors have a direct bearing on net incomes. The influence of such studies should be to induce the farmer, whose farm is not producing profitably, to adopt those practices which will increase his income. This work has had a tendency to raise the average production and take care of the increase in population.

But the past three years have been far from normal. We were called upon suddenly to feed not only our own people but the people of the allied countries and there is little doubt but that the present rate of production must be continued for some time after peace is declared. All the European warring nations will need food products and it appears evident that it will be some time before those countries will be able to produce their own supply. Conditions in these countries seem to indicate the depletion of breeding stock and there may be a strong demand for this class of animals. The reconstruction period after the war will create many problems for farm economists, such as the question of land settlement, the adjusting of cropping systems and other problems in farm organization.

Increasing the Nation's Food Supply.—The situation in relation to the food supply has been not so much economic as nutritional, that is, it has been a question of systems of production to feed the people rather than systems arranged purely for the sake of gain. No more effective work can be continued than the presentation of facts calling attention to the relative value of foods produced on an acre, with suggestions in farm practice that will increase profitably, if possible, those products of greater nutritional value.

Relation of the Labor Supply to Food Production.—In view of the depletion of the country's food supply and the possibility of a continued demand for increased crop production, farm management men should devote special attention to methods of adjusting the farm plan to give maximum production with the greatest efficiency in the use of labor and machinery. The scarcity of skilled labor has been the principal limiting factor in production and this factor will check the intensity of farming. The use of tractors in plowing and the preparation of soil for seeding may enable the farmer to get his crops planted at the proper time, though possibly this may not be much of

a factor in reducing costs. A saving of man power will likewise result from using four, six or more horses with larger machinery. Any line of work that will demonstrate how production may be maintained with less man power is most important at this time, otherwise there is great danger of land which might be put into wheat, rye or other food crops being seeded down and a more extensive type of farming adopted.

It is essential to have information concerning the amount of labor required for farm operations and its distribution. These data are fundamental in working out cropping systems, particularly in determining when and how much labor is required for each month in the season. It will show in advance what regular labor is necessary and indicate when extra help is needed. If it is impossible to obtain extra help at these times, it may be possible to introduce some labor saving machinery or the farmer may coöperate with neighbors in exchange of help. If this difficulty is anticipated and the amount of labor required for different operations is known, the difficulty may be obviated by readjusting the crop acreages and the introduction of supplementary crops, which will maintain a more uniform labor requirement. It is in the solution of problems such as these that farm management men can be most helpful.

The economy in conducting farm operations is also influenced by the location of farm buildings and the shape and arrangement of the fields. This is not so noticeable in the west where the farms are bounded by section and quarter-section lines, but it especially applies to eastern regions where the farms are laid out in small irregular fields which require delay in handling machinery and which adds to the expense of operation. The rearrangement of farm areas, making larger and more uniformly sized fields which can be more easily handled in rotation, would simplify the handling of machinery, save much time, and reduce the cost of production. Such work would attract the attention of farmers and be appreciated by them.

Standards Needed in Getting Cost of Production.—The importance of adopting, as far as possible, standards in methods and agreements as to the elements in production cost studies has been demonstrated by the greatly increased interest in this subject due to price fixing. Many agencies have been at work on these studies during the past year and such results as have come to light vary greatly in method of presentation as well as the elements included in determining cost. Sometimes overhead or indirect costs are included, and at other times not at all, in spite of the fact that every farm must bear in labor cost

alone a burden of indirect expense equal sometimes to one-third of the cost of all the labor performed. These same discrepancies exist as to other elements such as machine cost, supervision, building costs, etc.

Sometimes particular interests affecting the point of view influence the interpretation of inter-relationships in production cost-finding. One group insists that all feedable crops produced and fed should be charged to live stock at cost of production. On the other hand many writers, including those of the experiment stations and the United States Department of Agriculture believe market value at the farm is the only safe, practical and correct value to use.

The subject of cost production presents greater difficulties in certain of its aspects than almost any other branch of accounting science because of the many interrelations between farm enterprises. For example, certain equipment is used in preparing the ground, cultivation and sometimes harvesting of more than one crop. When land is prepared for oats or wheat, the land is also prepared for clover and timothy which follows. Likewise, in some regions, clover and timothy is seeded at the last cultivation of corn. Corn, oats and wheat are sometimes combined with live stock production. The raising of pure bred cattle and milk production are very closely related and the costs are hard to separate were it not for an established rule among farm accountants that in pure bred stock production, milk is a by-product and the cost of feed in animal production is not chargeable to milk.

Importance of Studying Farm Practice.—Crop yields and production per animal are important factors in profitable farming; therefore, any practice that will increase crop yields and production per animal will be not only of economic interest but will increase our food supply. Experiment station results point out clearly methods for increasing production, but these conclusions may be confined to certain types of soil. Just as important results have been worked out by farmers under much more widely varying conditions, hence, the study of farm practice should be an important field of work. Farm management surveys may help to analyze economic problems, but the story of how soils have been made productive through systems of rotations with clover, alfalfa, soy beans or other legumes and the methods practiced in the use of cover crops, manure, lime and fertilizers are inspiring, full of human interest and will help to interpret the figures obtained from surveys. Farm management surveys provide a basis for analyzing systems of farm organization and the results from certain operations. Farm practice studies, on the other hand, will show

the methods employed and why certain results are obtained. It gives additional information necessary to work out a complete farm plan. There is an unlimited field of work of this sort which will go far towards developing standards for farm operations.

Coöperative Investigations.—Progress in the study of economic problems will develop more rapidly and the results of investigations will be applied more successfully by the most earnest coöperation between the United States Department of Agriculture and state agricultural institutions; between the investigator or demonstrator and the farmer. The state institution is restricted in territory while the federal department can study regions which may include several states.

There is a great amount of data which have been obtained through surveys and which would make an interesting field of study if these data could be assembled and correlated. Instead of dealing with a few hundred or less, there might be several thousand records, which when assorted, would give much larger groups and a basis for more accurate conclusions. It would give an opportunity for studying selected types of farming, the profitableness of different combinations of enterprises and a study of many other problems heretofore impossible.

The study of important problems of a region and an outline of extension work which will encourage the confidence and coöperation of farmers, requires a person of exceptional experience and ability. First of all he should have a general knowledge of the organization of different types of farms and be familiar with soil conditions and farm practice. But what is of equal or more importance is that the person should have had experience in farm management investigations so as to determine the problems which affect successful practice.

HEALTH.

"Much has been done to improve the health conditions in cities, but little has been done in the country. When a city laborer is injured the ambulance takes him to a hospital and does not hold him up at the door while his pockets are searched for the necessary coin. When a farm worker is injured a telephone call is sent for the doctor. The doctor may reply, as many of the doctors are doing in the community where I live, that he does not practice outside the city limits. To make country calls in all kinds of weather is not a cheap or pleasant thing to do. How can good medical attention be brought to the country when the cost of going to the city patient is so much less and when the city patient is able to pay so much more? Hospitals, nurses and doctors must be available for farmers if rural health is to keep up with city progress.

"More important than the cure of disease is its prevention. Sanitary conditions on farms are none too good. Part of this can be remedied by education and part by allowing more money to reach the farms."

G. F. WARREN.

THE FARM LABOR OUTLOOK FOR 1919.

G. I. CHRISTIE,

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The farm labor outlook for 1919 must be considered in the light of conditions that existed during peace times, the removal of men from the farms for military and industrial purposes during the war, the extent of future agricultural production, the extent to which men will be released from the army and industries, and the opportunities and inducements to be offered to farm help.

Agricultural Production—1919.—The need for men on American farms will depend on the extent to which production is to be carried on. The Secretary of Agriculture in his Annual Report for 1918 states that, "The first year of our participation in the war, 1917, witnessed the nation's record for acreage planted—285,000,000 of the leading cereals, potatoes, tobacco and cotton, as against 261,000,000 for the preceding year, 251,000,000 for the year prior to the outbreak of the European war, and 248,000,000 for the five-year average, 1910—1914. This is a gain of 22,000,000 over the year preceding our entry into the war and of 35,000,000 over the five-year average indicated. Even this record was exceeded the second year of the war." There was planted in 1918 for the same crops 289,000,000 acres, an increase over the preceding record year of 5,650,000. While the acreage planted in wheat in 1917 was slightly less than that for the second year of 1915, it exceeded the five-year average (1910—1914) by 7,000,000, and the acreage planted in 1918 exceeded the previous record by 3,500,000. The acreage planted during the current fall season reaches 49,027,000, exceeding all previous records.

The acreage of farm crops that farmers will plant in 1919 is, of course, problematical. It is evident that the spirit of patriotism, the guaranteed price for wheat, a fixed price for hogs and high prices that were almost assured for other farm products, and the unusually favorable conditions during the spring for seeding and planting, are responsible for the large acreage in 1918. If the weather conditions for planting should be unfavorable in the coming spring, a material reduction in acreage must necessarily take place. Also, the stability of prices for farm products will be more or less in doubt and will influence to some extent the planting program. On the other hand,

prior to 1914, production in the United States was not keeping pace with consumption. Each year saw a material decrease in the amount of farm products exported to other countries. In fact, large imports of agricultural products were made by this country. During the war, there has been an increase in the population of the United States. The markets of the entire world have been opened for American products. It is almost assured that a large and urgent demand from European countries for foodstuffs will continue for one year or more. For these reasons, therefore, it would seem that American farms should maintain the maximum of production. Again the individual American farm can be compared to a manufacturing plant. It will be most profitable when it is operated to its maximum capacity. Instead of reducing acreage or production, it will be desirable from the farmer's standpoint to maintain maximum yields, and thus secure the largest financial returns. In this connection, of course, it is understood that many farmers who have planted land to grain crops year after year during the war in order to meet the demand for foodstuffs will now, since farming is to be restored to a peace time basis, place these lands in the regular rotation and seed them with other than grain crops. This readjustment of crops in the return to a basis for a profitable, permanent agriculture is sure to reduce in some degree the acreages of grain crops.

For a long time prior to the war, American farms have experienced a shortage of labor. In answer to the plea of the Department of Agriculture and agricultural colleges for a better cultivation of crops, keeping of live stock, spraying of trees, saving of fruit and the fixing up the home and the home grounds, farmers have replied that they recognized the practicability and desirability of all the claims but that they did not have sufficient capable help to do the work.

Industries and professions in the cities have offered opportunities and many times large cash returns to men of the farms with the result that there has been a large and continuous movement of people from the country to the city.

The acquiring of new lands for farms in practically every state has gone forward at a rapid rate. Efficient farm laborers have been encouraged to become tenants or land owners. The number of farms has materially increased while the number of farm laborers has failed to make a proportionate growth.

Information furnished by the War Department shows that more than four million men have been mobilized for military purposes. It is estimated that 25 per cent. of this body came from the farms. In

other words, American farms furnished to the military service more than one million men. Careful estimates also indicate that for every man taken from the farms into the Army one and one-half men went from the farms into war industries. This means a total loss of two million five hundred thousand from the farms during the period of the war. To meet this handicap caused by lack of regular or permanent farm labor, retired farmers have been pressed into service, boys, men and women from the cities have assisted, and larger machinery and labor saving equipment have been used. While farmers have been willing to get along and handle the work in this way and with such help as could be had, they realize the urgent need of skilled men to assist in carrying on the work. The aim should be to establish on the farms a large supply of regular and permanent farm help.

"Will a sufficient number of men be returned from the Army and war industries to meet the needs of agricultural production this coming spring?"—is a question prominently before the agricultural people. Already strong demands have been made upon the War Department to release from the Army at once all men interested in food production. The demobilization of all camps in the United States is proceeding in a rapid way and the larger number of men undoubtedly will be released by spring in sufficient time for the regular farm work.

With reference to the Army in France, considerable time will elapse before any large number of these men will be demobilized before peace is declared. It has been announced that one and one fourth million men have been chosen for occupational duties. Again, we know that in the case of past wars the demobilization has been somewhat slow. A statement in a recent number of the *Literary Digest* shows that demobilization in the case of the Russian-Japanese War required thirteen months; the Boer War, ten months; Spanish-American War, sixteen months; Turko-Russian War, eighteen months; Franco-Prussian War, twenty-eight months, and our Civil War, seventeen months.

While the United States government has been accomplishing an unusual feat during the war, it is evident that owing to the distance troops must be transported, and other uses for the shipping, that some reasonable length of time will be required to return the troops from over seas. There is little reason to believe that peace terms can be arranged before spring. Therefore, the larger number of men to be demobilized after that time will hardly be available until well into the summer or fall.

The manufacture of war materials and equipment is being curtailed and in a majority of plants stopped. Ship building is proceeding but with many less men than used prior to the signing of the Armistice. The work of the building and equipping of cantonments and other war plants has been abandoned. From these lines many thousands of men have been released to return to their former occupations and to enter other industries.

On the other hand, industrial and manufacturing plants engaged in manufacture of peace time products will give all possible employment. The government, states, counties and municipalities are starting large public projects, such as buildings and roads, for the purpose of utilizing the services of available workers.

The return of labor to the farm will be governed by the opportunities and inducements that can be offered in the way of wages, homes and chance for advancement from laborer to tenant and from tenant to land owner.

It is not reasonable to expect that the farms will pay the same cash wage that is now being paid in the industries. The farm offers, in addition to a cash wage, a home and large share of the living, an opportunity to acquire land, and a place in society that is not found in the cities.

It will be desirable for farmers to continue to offer a fair wage for labor and to provide satisfactory living accommodations for farm help. There is an urgent need for more tenant homes where married men can live in reasonable comfort. The old shack or bunk-house does not satisfy these people and will not hold them on the farm. Neat, well-built, well-located and comfortable tenant houses will attract men with families and hold them in the country.

Plans too that will offer high class laborers an interest in the farm business and which will aid them in securing not only a fair return for their labor, but a chance to become tenants or land owners will mean much in solving the labor problem.

SOME AFTER-THE-WAR PROBLEMS IN AGRICULTURE.¹

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The after-the-war problems in agriculture are not strikingly different in kind from the pre-war problems. But the war has made the problems more acute. We are now going through a period of reconstruction of ideas. All that is, is questioned. New theories on every subject receive a ready hearing. The world is in flux. That which is done may last for years. That which is not done may not be accomplished in years. If farmers do not now plan ahead, they may find that plans have been made as plans in the past so often have been made on the assumption that the problems of mankind begin at the city terminal of the railroad.

The Fundamental Rural Problem.—The fundamental problem in agriculture is to make and keep conditions of farm life such that a fair proportion of the intelligent and able citizens of the nation will continue to live on farms. Farm families are larger than city families. It, therefore, follows that whatever the farm population is, the nation will become. The strongest safeguard that the nation can have is an independent, forward-looking and self-respecting farm population.

Methods of Meeting the Problem.—There are two theories as to the best way to solve the farm problem. One method is to search the world for persons who will be content with farm conditions as they are. This method has many powerful advocates. Some would bring in Chinese. Considerable agitation for this procedure is constantly going on. Others would bring in the backward races of Europe and Asia to work our farms—peoples so backward that to them our worst farm conditions would seem like luxury. The same idea often takes the form of complaint against the desire of the American farmer to share in the American standard of living. The conclusion is reached that the farmer should be replaced by a peasant family whose house-keeping is so simple that all members of the family work in the fields and whose desires for education are so slight that the children are kept out of school to work.

¹ Paper read before the American Farm Management Association at Baltimore, Md., January 9, 1919.

It is no merit in a peasant that he can pay for a farm as quickly or possibly more quickly than an American farmer can, when the latter keeps his children in school and allows his wife to devote a considerable portion of her time to caring for the home and children, rather than work full time at farm labor.

These contradictory ideas are not always thus boldly stated, but in practically every discussion of farm conditions each of these two points of view has its spokesman. Not infrequently the most plausible speaker advocates the wrong solution. Shall we make farm conditions such as to keep intelligence on the farm, or search the world for a civilization so backward that it will be satisfied with conditions as they are?

Movement from Farms to Cities.—In the past generation the conditions of living in cities have been greatly improved. It is evident, therefore, that unless corresponding improvements are made in farm conditions the intelligent portion of the farm population will be more strongly drawn to the cities than ever before. Let us see what these improvements are. Some of the more important changes may be classed under the headings of education, health, recreation.

The most powerful force that leads persons to leave farms is the expectation of greater remuneration. The majority of persons who go from the farm to the city go at one of three periods in their life; when the children must enter high school, when the farmer wishes to retire, or when young men and young women are old enough to start work for themselves.

The desire to allow the children to have high school privileges is one of the important factors that leads farm families to go to town. Not only is this one of the strongest factors leading families to go to cities, but it selects the very best type of citizens, that is, the kind who are willing to make the most sacrifice for the benefit of their children. The remedy is obviously to bring high school facilities nearer to the farm.

Desire to live in a house that has a bath room, heat and electric light is an important factor in many cases. The remedy is obviously to make farming profitable enough so that farmers can afford furnace heat and bath rooms, and then develop a sentiment that will spend the money for a bath room, even though it may not add to the selling value of the farm.

The desire to be able to obtain medical service is another powerful factor leading middle-aged farmers to take their families to town. The remedy is to have better medical service in the country.

The desire for recreation is not one of the major factors in leading farm families to go to town, but does play a considerable part in the movement of young men and young women to the city. But the strongest force leading young men and young women to go to the cities is higher wages.

The only large demand for young women on the farms is to do housework or become wives. Many of those who do not marry farmers as soon as they are mature, seek employment in cities. The remedy is obviously to bring work to the country.

The desire for adventure that is present in every normal boy and girl may be satisfied in many ways without leaving the farm. Attendance at good vocational high schools tends to satisfy this desire by opening up the problems involved in man's attempt to conquer nature. The games and the social advantages of the high school also help.

The Increasing Cost of Living.—The high cost of living in each decade promises to become a more difficult question. A correct understanding of the problem is, therefore, of more than passing importance. We have, doubtless, passed the point of maximum food production per hour of human labor. New inventions help, but in spite of them, every additional bushel is now a more expensive bushel. A machine that saves labor on the farm does not save as much human time as is often assumed, for someone must make the machine. Food is becoming fundamentally more expensive to produce in terms of human effort, because poorer land must be used and because on the good land, production has reached the point of diminishing returns. If it were not necessary to increase the amount of food, inventions would reduce the amount of human effort required in food production. But the demand for more food calls for the use of land that must be reclaimed at great expense, and calls for more intensive methods on land now in use. It is of course possible, and perhaps probable, that improvements in manufacturing will take place so fast as to more than offset the increasing cost of food so that general well being may continue to be improved. But food is almost certain to continue to call for a larger share of the workers' income, if the population of the world continues to increase as it has in the past fifty years. There are no more Iowas waiting for the plow.

One of the great underlying factors in the present world conflict is the effort to place on someone the blame for the pressure of population on food supply. We can no longer obtain the former supply of food with the same effort. Not knowing that this is due to the ratio of population to natural resources, each class believes that it is

not receiving just treatment. The industrially-minded believe that farmers are at fault, labor blames capital, farmers blame middlemen, consumers blame prices, nations blame each other.

The past generation was the golden age for manufacturers. It was the age of cheap food. We were harvesting nature's crop of lumber, and were skimming the fertility accumulated by ages of nature's processes. Now we must reclaim some southern soils where the hasty exploitation has caused erosion so serious that nature unaided could not remedy it in ages. We must get the alkali out of land on which our first dash of irrigation gave wonderful crops but serious consequences. We must fertilize soils that were at first productive, but that were not exceptionally rich in plant foods.

The capitalist, the laborer, and the city consumer agree on at least one thing. They are all unable to understand why the cheap food does not continue. They are willing to import peasant farmers, to entice soldiers to farms, to fix prices, to prohibit the killing of heifer calves, to do almost anything except the one inevitable thing, that is, pay more for farm produce than was formerly paid. Our rapidly multiplying population, the hordes that have been coming from Europe and the rather sudden running out of the free fertile lands, coming at the same time that labor organizations are demanding shorter hours and more of the comforts of life, make the problems of the near future acute. Add to all this the complications involved in deflation with the many injustices that follow contraction in the currency, and still further add the epidemic of mediæval ideas that is spreading over the world, and we can well see the necessity of clear thinking. I believe that the American can solve the problem, if it is solved in an American manner, but if the German and Russian philosophies that are spreading over all the world are accepted, I am fearful of the future.

Each year when the rainfall is short the food problem is likely to be more critical than ever before. If the time comes when such a year is accompanied by unemployment, conditions will indeed be serious. In such years we may expect to see efforts to make food abundant and cheap by legislation. Such efforts have their natural reaction in desires of producers to have legislative protection in years of over-production and low prices. Both kinds of legislation are very dangerous.

There is grave danger that the present antagonisms between city and country will grow. There is at present no means of informing the consumer as to the farmer's point of view. The city newspaper

is read by the farmer so that he learns the consumer's view, but as yet there is no effective means of giving the consumer the farmer's point of view. Nothing is so conducive to antagonism as lack of knowledge.

Nor does the farm point of view receive adequate expression in legislative halls or on the many bureaucratic commissions to which we are delegating the powers of government. Nearly everyone who has money enough to buy a home outside the cities is called a farmer, or calls himself one when he desires to discuss farm problems. Mr. Hoover is said to have remarked, "Who does represent farmers, and what do farmers really want?" The time has come when those who assume to speak for farmers should be representatives of farmers' organizations. Every such person should be an American first, but it is not enough to be an American when one deals with technical matters. He should also know technical details.

This is the age of organization. Class groups of all kinds are endeavoring to obtain for themselves more than their normal share of the good things of life. Nearly always the attempt is made to obtain the desired results by some form of monopolistic control. So far the producers of food have been about the only unorganized persons. Because of the actions of other groups, farmers are being compelled to organize. I am sorry to see organization come about in this way. I believe in organization but am sorry that it has to come about for protection. I do not consider the ideal organization of society to be a collection of competing organizations.

The farmer does not ask an eight-hour day, he does not even ask a ten-hour day. But, except in emergencies, he is certainly entitled to expect to be able to make a living from ten hours of work. He does not ask that child labor be abolished on farms, but should ask that farm children be not kept out of school to do farm work.

At the risk of appearing to add a few planks to the agricultural platform, I will mention in detail a few of the farm problems as I see them. I have omitted some of the most important problems, but certainly all that I mention are worthy of consideration.

UNEMPLOYMENT.

During the war, food prices have been controlled to some extent. This control has had some influence in holding down production. Probably it has delayed to a limited extent the time for highest prices for food. As wages come down there may be more critical food problems than we have yet met. The greatest danger is that a short

crop year such as occasionally comes may come at the same time as a period of unemployment.

The farmer is as much injured by general unemployment as is the city. During the period of reconstruction and deflation of the currency, it is highly probable that periods of panic and unemployment will come. Plans should be made for great public works and held in abeyance to be developed whenever unemployment occurs. This will be the cheapest way to get such work done and will at the same time help to stabilize conditions. Such work in the past has usually been done in periods of high prices rather than in periods of unemployment. There are many improvements that the Federal Government, states, and local governments should make. Roads, new school buildings, and hospitals are among these. The Federal Government should construct good permanent buildings in Washington to avoid paying the enormous rents that it has for years paid. The war has shown the need for a few national highways for moving freight and passengers. One such road should run north and south along the Atlantic coast, one along the Pacific, and one down the Mississippi Valley. One should cross the northern part of the continent and one the southern part. Ordinary state roads are wholly inadequate to handle the traffic that the government has put on the section of road from Chicago to New York. These trunk lines are spectacular, but the greatest need is for better roads from farms to the railroads. Both are needed. States and counties should be continually building roads but they ought to prepare comprehensive plans and push the work when it can be done cheaply, that it, at periods when there is unemployment.

PROTECTION.

The first duty of a state is to protect its citizens. The city dweller calls the police at the first sign of trouble. In most states, the farmer must turn to his shotgun, just as his forefathers turned to the rifle. In Canada and in some of our states mounted police now bring protection to the farmer and his property. This protection is particularly needed in the states that have a dense population, and in the South, but every state should have police protection in the country. The common practice in small towns of avoiding expense by allowing petty criminals and hoboes to go free if they will leave town often results in sending them to the country.

EDUCATION.

Free education in every subject from the primary grades through the university is the only sound basis for democratic citizenship. This means that provision should be made for allowing boys and girls to attend any public school without having to pay any tuition. I believe that free high schools are now available for all children living in cities, but a very large number of the farm children have to pay tuition. Even where tuition is free the farm children often have to leave home and pay board so that education for them is very expensive. The number of small high schools should be increased so that education may be made available to all. State aid should help small public schools and small high schools to such an extent that equal school privileges can be had in all parts of the state by substantially equal local taxation. Education is a state function. If the state desires to have persons live on farms it should see to it that educational opportunities are not thereby denied. The farm problem will not be solved so long as the accident of being born on a farm denies so many children the privilege of attending high school.

Laws should be so framed as to have state aid follow the boy or girl to any public high school in the state, and every high school that receives any aid from the state should be open free to every boy or girl in the state, or else all state aid for that school should stop.

Not only should there be free common schools and free high schools but college and university education should likewise be free. In some of the older states, all of the original arguments against free common schools will be brought to bear against this proposition and each of these arguments will be refuted by the same logic that made the free common school triumph. I will not attempt to enumerate these arguments here. Many states have for years furnished free education to all. It is no new experiment, but a sound principle of democracy that must be accepted. Now is the time to demand it. Any ablebodied boy or girl who does not have to help to support others, can make a living while attending college. But to add \$100 to \$150 a year for tuition makes such a course prohibitive to many.

LABOR.

About three-fourths of the farm labor is done by the farmer and members of his family. When farm wages are high the farmer and his family receive good pay for their work, when wages are low they receive poor pay.

The individual farmer sometimes thinks that if he can get cheap labor it will help him, not realizing that when all get the same kind of labor, the labor that he and his family do must compete with the cheap labor that he has helped to introduce. Except in the South there is no permanent hired-man class in America. The hired men are, in general, brothers and sons of farmers. Whenever any other type of labor is largely introduced into a farming community, social conditions become very bad. Population is so sparse in all farm regions that there are not enough people to keep up good social institutions unless all the people are of one race so that there are no impassable social barriers. Every farm community should do all in its power to prevent the introduction of any kind of laborers who do not promise to be assimilated.

The employer should always have a serious labor problem in a democracy, for a labor problem usually means that labor receives so large a part of what it produces that great skill is necessary in employing it in such a manner as to be able to pay the common wage.

LAND OWNERSHIP.

The American ideal in handling land is to have the operator be the owner. Most of the farming in America is done on this basis. Normally the farmer who is too old to continue farming rents his farm to his son, or son-in-law, or to some other young man who as a hired man in the community has established a reputation for honesty and thrift. Later the farm is sold, usually to a tenant. The average amount of time spent as a tenant in New York is about ten years and the average tenant becomes an owner at about thirty-five years. This means that nearly half of the tenants are not able to become owners until they are older than 35 years. Conditions are approximately similar in other regions where not more than one-third of the farmers are tenants. It would be desirable to have credit systems so perfected that the average age at which ownership is acquired could be reduced to thirty years so that more of the years when the farmer is at his best physically could be devoted to making a home, and doing the innumerable things that need to be done on farms.

In some parts of the United States land tenure has become a serious problem. There are several ways of meeting the situation. Perfection of credit systems is one way. Other proposed remedies have to do with laws concerning land ownership.

There are fundamental reasons why individual ownership of agricultural land is the only sound basis for agricultural development.

Theories as to single tax, and nationalization of land are widely promulgated. Such theories are always city-made. They fail to distinguish between city building lots and farm soils. They are able to see buildings as an improvement made by the owner, but do not realize that a farm soil is also made or destroyed by the owner. Any farmer in an old community knows that a soil that is worth \$100 per acre is little more than pay for the drains put in it, the stones picked off, the fences put up, the weeds eliminated, and the residual manure, and fertilizer applied. English laws concerning tenant rights recognize roads, stream control, tile drains, fences, buildings, orchards, grass seeding, permanent pasture, residual manure and residual fertilizer as among the improvements for which the tenant is entitled to compensation, that is, values added by the operator. The true farmer watches and cares for his fields as he does his flocks. His fields are personal. He does not see the bacteria in the soil, but by indirect means he raises bacteria and earthworms as carefully as he husbands his flocks. A generation of farming in which the soil does not receive this personal regard is enough to ruin any but the best land.

But private ownership must not be abused. No farm land should be allowed to be held continuously for purposes of renting. Every community should include a limited number of tenant farms as aids to young men in getting started. But this number is fully supplied by farmers and widows of farmers who rent their farms for a few years after they are unable to continue direct operation, and before they are able to make a satisfactory sale. It often takes five to ten years to sell a farm at a satisfactory price. The landlord who has been a farmer often contributes very materially to the success of the farm and the tenant because he knows how to farm. Just how long the owner should be allowed to run a farm as a tenant farm is a question, but certainly this period should not exceed twenty-five years.

Large tracts of land that are too large to be operated to public advantage should be broken up into farms of normal size and sold to the operators.

As important as these prohibitions is positive legislation that will bring together the persons who have money to lend and the young farmer who wishes to establish a farm home.

The Federal Land Bank promises to be of much help. The law may need to be revised, but it should not be revised in any manner that will increase the amounts loaned per farm. The land bank loan should represent an exceedingly conservative loan in order that it may carry the lowest interest rate.

Certainly legislation is needed that will do for agriculture what the Federal Reserve system is doing for commercial industries in furnishing short-time credit. Possibly this can be accomplished by modifying the Federal Reserve law, or by supplemental legislation. Such credit in agriculture must recognize any period up to one year as the normal basis for a short-time loan.

Mere lowering of interest rates is not the primary factor in credit. Interest rates and land values bear considerable relationship to each other. The time allowed and methods of payment are quite as important as interest rates.

FOOD DISTRIBUTION.

I am not in sympathy with blind attacks on middlemen any more than with blind attacks on farmers. The individual middleman is often controlled by general circumstances over which, as an individual, he has little control. But the feeding of great cities is a new problem. It is not to be expected that our present methods are the best ones than can be devised. In some cases radical changes must be made.

A few great handlers of food are obtaining control of more and more kinds of foods. The public will not long tolerate any "hold-ups" by persons located at strategic points on the road from producer to consumer. Some of the bitterest contests of the near future promise to be over food distribution.

The agricultural colleges should begin serious study of the problems of food distribution. Such studies are very different from fertilizer tests or feeding experiments, and will require a great broadening in the outlook of the agricultural colleges.

COÖPERATION.

Many public agencies have been advocating that farmers coöperate in the sale of their produce. There are many instances of successful coöperation. However, in those cases where the farmers' organizations must deal with large corporations that approach monopolistic proportions the road to coöperation is by no means free from obstructions. In some states one branch of the government has been preaching coöperation and has been organizing coöperative societies while another branch of the state government has been doing the "follow-up" work by trying to put the officers of the coöperative associations in jail because they coöperated.

The farmer is a laborer who owns his own tools; he is also a small business man. His products are usually more the product of his own toil than they are the product of capital, or hired labor. The principle of collective bargaining must be accepted for both classes of labor. This does not mean that an unscrupulous labor body that happens to hold the key to public welfare should be allowed unlimited action, nor should an unscrupulous group of farmers be allowed unlimited action. We do not allow unlimited action to two men who are making a horse trade. But, the principle of collective bargaining should be recognized.

EQUALITY OF OPPORTUNITY.

A democracy must allow to every individual complete freedom to enter any useful work that he may choose. The right to enter any occupation and make of one's talents the fullest possible use is fundamental. So long as complete freedom in choice of occupation exists, it is utter folly to attempt to entice persons into any particular occupation. Those who are added to the industry by special endeavor only force others out of the industry. The government should furnish education that will help each person to decide on his occupation, and should furnish technical training to help in preparing for the chosen work, but the only democratic way to maintain the proper proportion of workers in each industry is to have the rewards for a given ability and effort the same in one industry as in another.

SUBSTITUTION.

The wooden nutmeg was looked upon as a great achievement in the art of substitution. But progress since that day has been so rapid that the wooden nutmeg looks as primitive as a high-wheeled bicycle.

With mounting costs of living, the desire to use everything is commendable, so long as the article is wholesome and is sold honestly. But substitutes are not noted for their honesty. Oleomargerine would have few enemies if the groceryman sold it as oleo and if the bill of fare called for bread and oleo instead of bread and butter. The manufacturer wants to color it yellow for the sole purpose of deception. It is not that yellow is an especially favored color. Meat substitutes are not colored yellow, and if some one invents a substitute for an apple he will want to color it red, not yellow. When cottonseed oil is used to make imitation butter, it is colored yellow, but when the same oil is to pass for lard, white is perfectly satisfactory. Oleo now has its own troubles, for still cheaper oils have

been found and are sold as oleo when they are not. We now have imitation eggs, and imitation condensed milk, and imitation cow feeds. Aside from the deception which in itself is injurious, there are other serious effects. Children that need animal food are fed on vegetable fats that will not make them grow, and the legitimate industry is seriously hampered by having to carry numerous parasites. Animal foods are always more expensive than vegetable foods, but they are necessary. The fight to compel all products to be sold for what they are has not been won.

It is now time for all producers and consumers to take a definite stand that no injurious substances shall be allowed to be sold, and that every product shall reach the ultimate consumer for what it is.

DISSEMINATION OF MANUFACTURING.

The exceedingly cheap food in America has to a considerable extent been responsible for the congestion of our cities. Food was so cheap that the industrial worker did not care for a garden. He could live on the tenth story and have food brought to him. The high prices of food promise to favor the manufacturing plant that is located in a region where the workers can have small areas of ground for gardens. Here women and children can work, and the laborer can work out doors after hours. A limited amount of gardening after a day in the factory is the best kind of diversion. It is time to stop building vertically and begin to build horizontally. This movement has already begun.

Public agencies such as the agricultural colleges and department of agriculture should study the problems of farm economics as they have in the past studied the problems of production. Such studies will require good judgment and tact, but the tact should not go to the extent of failing to tell the truth.

These are but a few of the problems that we must now face. Farmers should be fully organized so that they may see to it that these and other national problems are solved in the American manner, rather than be solved by imported ideas brought over by backward nations.

SOME POINTS BROUGHT OUT BY SUCCESSIVE SURVEYS OF THE SAME FARMS.¹

H. W. HAWTHORNE,

OFFICE OF FARM MANAGEMENT.

In the early years of farm management surveys, conclusions were based upon the data obtained for but a single year. A great deal of care was used in selecting the areas, and any in which some unusual conditions prevailed within the year were avoided. In other words, it was the aim to select only areas where practically normal conditions prevailed throughout the year to which the data pertained. But for all that, many persons interested in agricultural problems wondered whether conclusions based upon these single-year surveys were applicable to any year save that to which the data pertained.

To aid in throwing some light upon this question, the Office of Farm Management a few years ago planned to conduct several surveys, each extending over a period of years, and each located in a representative agricultural region.

These continued-surveys, as we have been calling them, are now being conducted in seven areas, as follows:

1. The hill section of Ohio.
2. A dairy section of Wisconsin.
3. The Corn Belt in Indiana.
4. A trucking district of New Jersey.
5. An apple-growing section of the Shenandoah Valley in Virginia.
6. A trucking section of Florida.
7. A citrus fruit section also in Florida.

The surveys in the last four areas named have been conducted for but two or three years, while those in the first three areas have extended over a period of five years or longer. The discussions in this paper center around the three areas first named, for each of which there are records for five years or longer.

¹ Paper read before the American Farm Management Association at Baltimore, Md., January 9, 1919.

DESCRIPTION OF EACH AREA UNDER DISCUSSION.

Since some of you may not be familiar with all of these areas it will, perhaps, be worth while to give here a brief description of each.

The Ohio Area.—The area in the hill country of Ohio is representative of much of the hill land drained by the Ohio River. The topography grades from rolling to very steep, and is often rocky, large unbroken fields being seldom found. The land is fairly productive and valued at \$31 per acre. The farms are from four to nine miles from railroad points, and the wagon roads are hilly and unimproved. The farmers practice a general or mixed type of farming. The farms average around 160 acres, 22 per cent. of which is unimproved. (By unimproved land we mean woodland and wasteland as used in our survey records.) Approximately one-half of the land is used for pasture, and one-fourth in growing crops. Of the crop land about one-fourth is in corn, one-fourth in small grains—most of which is in wheat—and one-half in hay. Only six per cent. of the corn raised was sold, 35 per cent. of the wheat and 16 per cent. of the hay. Of the farm receipts, 15 per cent. was from crop sales, 6 per cent. from dairy products, 21 per cent. from cattle, 14 per cent. from sheep, 12 per cent. from hogs, and 17 per cent. from poultry.

In this area we have usable records from 25 farms for seven successive years, but the data for the last year was obtained quite recently and has not yet been tabulated.

The Wisconsin Area.—The area in Wisconsin is typical of a considerable part of the Wisconsin dairy region. The surface is rolling to hilly, the land is valued at \$100 per acre, and only the main wagon roads are improved. The farms average 148 acres, of which 11 per cent. is unimproved; a little more than one-third of the land is in pasture, and a little more than one-half in crops. The crop land is divided almost equally among corn, the small grains and hay. Most of the small grain area is in oats. Practically all of the crops grown in this area are fed on the farms, and the crop sales are but 3 per cent. of the farm receipts. The sale of dairy products represents almost one-half of the total receipts. The sales of dairy products and cattle combined represent close to two-thirds of the farm receipts, while hog sales represent more than one-fourth of the receipts. In this area we have records from 60 farms for five successive years. This work was conducted co-operatively with the Wisconsin College of Agriculture.

The Indiana Area.—The area in Indiana is representative of much of the eastern part of the Corn Belt area. The surface is level to roll-

ing. Much of the land is tile-drained, and it is valued at \$185 per acre. The wagon roads are improved—most of them graveled—and railroad points are readily accessible the year round. The farms average 127 acres and but 5 per cent. of the land is unimproved. Approximately one-fourth of the land is in pasture and three-fourths in crops. Close to one-half of the crop land is in corn, one-third in the small grains—mainly oats—and the remainder in hay. A larger proportion of the crops produced in this area was sold from the farms than in either of the other areas. About 24 per cent. of the corn was sold, 80 per cent. of the oats, and 26 per cent. of the hay. Thirty-five per cent. of the farm receipts was from the sales of crops—mainly corn and oats—and about one-half from each, 40 per cent. was from hogs, and 13 per cent. from cattle. In this area we have records from 100 farms for five successive years.

TWO-FOLD OBJECT OF THIS DISCUSSION.

When these surveys were begun, we little dreamed that we were soon to be involved in a World War, one that would bring about a very abnormal condition for American farmers, so abnormal, indeed, as to divert us somewhat from the original object of these surveys. But, were the original object entirely lost, we feel the work well worth while, for we believe they furnish the most reliable data for tracing the effects of the war upon American agriculture. This presentation, will, therefore, have the two-fold object of showing variations as they occurred year after year, and the variations for the years prior to the War, as compared with the years during the War. Since the rapid advance in the prices of farm products did not begin until 1916, when speaking of the period before the War, we refer to the years prior to 1916, and when speaking of the period during the War, we refer to the years 1916 and 1917.

VARIATIONS IN LABOR INCOME OVER A PERIOD OF YEARS.

The labor income variation from year to year in each of these areas is of fundamental interest. (Table I.)

TABLE I.—*Labor incomes over a period of years in the Ohio, Wisconsin and Indiana areas.*

| | 1912. | 1913. | 1914. | 1915. | 1916. | 1917. | Average of Years Before the War. | Average of Years During the War. |
|-----------------|-------|-------|-------|-------|-------|-------|----------------------------------|----------------------------------|
| Ohio | \$152 | \$110 | \$190 | \$160 | \$324 | \$635 | \$153 | \$480 |
| Wisconsin | — | 214 | 56 | 68 | 626 | 1075 | 113 | 850 |
| Indiana | — | 220 | 15 | 225 | 791 | 794 | 153 | 792 |

In the Ohio area the labor incomes for the years prior to the War ranged from \$110 to \$190. Omitting the year 1913, the range was from \$152 to \$190, which is a variation of only \$38. The year 1913 might be considered below normal for the following reasons: It was the poorest wheat year—the yield per acre being scarcely more than one-half the averages of 1912, 1914 and 1915,—the quantity sold being less than one-half of the year of next lowest production, and less than one-fifth that of the year of highest production. The price was slightly lower than in 1912, 18 per cent. lower than in 1914, and 16 per cent. lower than in 1915. The apple crop was nearer a failure than any other year—the quantity sold being 17 per cent. of that of the next poorest year and only 3 per cent. of that of the best year. The price was from 5 per cent. to 30 per cent. lower than in other years. The price of wool was 20 per cent. lower than any other year.

Very low labor incomes are shown for the Wisconsin area in 1914 and 1915, which reflect the prices of dairy products and hogs for those years. In 1914 the prices received for dairy products were lower than any other year. They were slightly higher in 1915, but almost entirely overcome by the lower price of hogs.

The low labor income in the Indiana area in 1914 reflects the low corn yield, which was 10 bushels less per acre than in 1913 and 4 bushels less than in 1915. Hogs were lower in 1915 than any other year, and we would expect the reflection of this in labor income, but the crop sales were \$278 more per farm than in 1914, oat sales were 38 per cent. more than in 1914 and wheat sales almost double.

All the areas show higher labor incomes in 1916 than in the earlier years, and the Ohio and Wisconsin areas still higher in 1917, owing to combinations of higher price levels and increased production. In Indiana the labor income in 1917 scarcely exceeded that of 1916 due to a severe hail storm which swept diagonally across the area in July. Had we used only the records of farms outside the strip affected by the hail storm, it is my judgment that the labor income for 1917 would have shown as much increase over 1916 as in the other areas.

The difference in actual value of the labor incomes for the years before the War and for the years during the War is less than indicated in this table, because a dollar had less purchasing value during the War than before.

VARIATIONS IN PER CENT. RETURN ON INVESTMENT OVER A PERIOD OF YEARS.

The per cent. return on the investment after deducting the farmer's labor from the farm income, may also be on interest. (Table II.)

It shows the same tendencies to variation as the labor incomes, but the variations are not so wide. It is worthy of note that in each area and for each year before the War the per cent. return on investment was under 5 per cent., while in each area and for each year during the War the per cent. return on the investment was over 5 per cent.

TABLE II.—*Per cent. return on investment¹ over a period of years in the Ohio, Wisconsin and Indiana areas.*

| | 1912. | 1913. | 1914. | 1915. | 1916. | 1917. | Average of Years Before the War. | Average of Years During the War. |
|-----------------|-------|-------|-------|-------|-------|-------|----------------------------------|----------------------------------|
| Ohio | 2.8 | 2.2 | 3.4 | 3.0 | 5.4 | 7.8 | 2.8 | 6.6 |
| Wisconsin | — | 3.9 | 2.9 | 2.9 | 5.8 | 7.7 | 3.2 | 6.8 |
| Indiana | — | 4.6 | 3.8 | 4.6 | 6.7 | 6.5 | 4.3 | 6.6 |

RECEIPTS AND EXPENSES DURING THE WAR COMPARED WITH THOSE BEFORE THE WAR.

We have designed a table for a comparison of the increase in farm receipts and expenses for years during the War over those for the years before the War. (Table III.) In this table the receipts and expenses for the average of the years during the War are expressed as percentages of the averages for the years before the War. In the Ohio area the receipts during the War were 52 per cent. more than before the War, and the expenses 24 per cent. more; in the Wisconsin area the receipts were 55 per cent. more and the expenses 29 per cent., while in the Indiana area the receipts were 41 per cent. more and expenses 29 per cent. It may be observed that expenses did not increase as rapidly as receipts, the average percentage increase for all the areas being just about one-half as great. But if we carry the study a little further and separate the years 1916 and 1917, we find the percentage increase in expenses in 1916 was only about one-third as great as the increase in receipts (average of the three areas), while

TABLE III.—*Percentage receipts and expenses for the years during the War were of the years before the War in the Ohio, Wisconsin and Indiana areas.*

| | <i>Receipts.</i> | <i>Expenses.</i> | | |
|-------------------------|---------------------------|------------------|-------|---------------------------|
| | Average of 1916 and 1917. | 1916. | 1917. | Average of 1916 and 1917. |
| Ohio | 152 | 127 | 177 | 124 |
| Wisconsin | 155 | 136 | 174 | 129 |
| Indiana | 141 | 132 | 150 | 129 |
| Average of three areas. | 149 | 132 | 167 | 127 |
| | | | | 111 |
| | | | | 137 |
| | | | | 116 |
| | | | | 143 |
| | | | | 107 |
| | | | | 151 |
| | | | | 144 |

¹ After deducting farmer's labor from farm income.

in 1917 it was about two-thirds as great, and it is my judgment that when the recently obtained 1918 data for the Ohio area is tabulated it will show the percentage increase in expenses equal to or in excess of the increase in receipts.

How Farmers "Speeded-up" During the War.

We have heard no little commendation for American farmers on their response to the food needs of the United States and the countries with which it was associated in the War. In keeping with this we have designed a table to show some of the ways in which the farmers in each of these areas, with little if any additional labor available, attempted to do their share in meeting the food crisis. (Table IV.)

In the Ohio area with an increase of only 2 per cent. in the amount of labor the crop area was increased 9 per cent. and the amount of live stock 15 per cent.

In the Wisconsin area with an increase of 4 per cent. in the amount of labor the crop acreage was maintained and the number of cows was increased 13 per cent.

In the Indiana area with no increase in the amount of labor the corn acreage was increased 15 per cent. and the number of hogs sold increased 5 per cent.

It is readily seen that the farmers in each area, as a whole, increased the volume of their business. Of course, there were all sorts of variations on individual farms,—some show a much greater increase than indicated by these figures, and some less.

TABLE IV.—*How farmers "speeded-up" during the war in the Ohio, Wisconsin and Indiana areas.*

The Ohio Area.

| | Before the War. | During the War. | Percentage Increase. |
|---------------------------|-----------------|-----------------|----------------------|
| Months of labor | 17.3 | 17.6 | 2 |
| Acres in crops | 42 | 46 | 9 |
| Number animal units | 14.5 | 16.7 | 15 |

The Wisconsin Area.

| | Before the War. | During the War. | Percentage Increase. |
|-----------------------|-----------------|-----------------|----------------------|
| Months of labor | 22.2 | 23.0 | 4 |
| Acres in crops | 81 | 81 | 0 |
| Number cows | 16.1 | 18.2 | 13 |

The Indiana Area.

| | Before the War. | During the War. | Percentage Increase. |
|---------------------------|-----------------|-----------------|----------------------|
| Months of labor | 19.4 | 19.4 | 0 |
| Acres in corn | 40 | 46 | 15 |
| Number of hogs sold | 56 | 59 | 5 |

The response came along the line of the prevailing type which is perhaps the best type for the locality, and for which the farmers are best fitted. In other words, they did what they thought they could do best. In the Ohio area where most of the crops are marketed through live stock, about one-half of the livestock increase was in cattle, which is the major enterprise of the area. In the Wisconsin area—a dairy section—the increase was in the number of cows. In Indiana—an area in the Corn Belt—where most of the corn is fed to hogs—there was no increase in the crop acreage, but the cropping became more intensive by decreasing the acreage in small grains and in hay and increasing the corn acreage.

ANNUAL OUTPUT PER MAN.

In our study of the first five years in the Ohio area we have worked out the quantities of the several farm products that these farmers have put on the market annually per man. These quantities are shown by the accompanying table. (Table V.)

TABLE V.—*Annual output per man on 25 farms over a period of five years, Washington County, Ohio.*

| Items. | Quantity. |
|--|---------------|
| Grain | 2,822 pounds. |
| Roughage | 6,042 pounds. |
| Potatoes | 3 bushels. |
| Apples | 15 barrels. |
| Eggs | 486 dozen. |
| Wool | 247 pounds. |
| Butter | 124 pounds. |
| Cattle, live weight | 1,850 pounds. |
| Hogs, live weight | 1,089 pounds. |
| Sheep, live weight | 600 pounds. |
| Poultry, live weight | 196 pounds. |
| Equivalent of cattle, hogs, sheep and poultry in dressed meat | 2,293 pounds. |

The region represented by this area is generally regarded of much less importance agriculturally than either of the other areas, yet this region includes a considerable proportion of our rural population and of the farm land in the United States, and in addition to what it produces for home consumption, it makes a very appreciable contribution to the food and clothing supply of the nation as a whole.

These figures are given primarily to illustrate something that may be worked out for any area, whether it be a single-year study or one carried over several years. Such data are often of as much concern

to our nation as are labor incomes, per cent. return on investment, or some other items that we always work out, and sometimes of even greater concern.

VARIATIONS IN LABOR INCOMES OF INDIVIDUAL FARMERS.

Heretofore we have concerned ourselves only with all the farms for which we have records every year in each of these areas. Now, we should like for a few moments to deal more especially with individual farms for successive years. We have already shown that there is yearly variation in the labor incomes of each area, and for which we have accounted in a general way. The variation of yearly labor incomes for individual farmers is somewhat greater than the average of all in any of these areas. (Table VI.)

TABLE VI.—*How 8 of the 25 Ohio farmers ranked in labor income for each of the six years.*

| Farmer. | 1912. | 1913. | 1914. | 1915. | 1916. | 1917. |
|-----------------|-------|-------|-------|-------|-------|-------|
| No. 1 | 1 | 1 | 2 | 3 | 3 | 1 |
| No. 2 | 6 | 5 | 7 | 7 | 6 | 8 |
| No. 3 | 23 | 24 | 22 | 24 | 25 | 25 |
| No. 4 | 8 | 3 | 1 | 6 | 5 | 4 |
| No. 5 | 7 | 2 | 6 | 1 | 9 | 18 |
| No. 6 | 3 | 4 | 3 | 4 | 18 | 7 |
| No. 7 | 9 | 7 | 17 | 5 | 1 | 2 |
| No. 8 | 25 | 8 | 16 | 12 | 14 | 11 |

This table was designed to give you some idea of these variations with individual farmers, and it was thought to be of additional interest to show the relative standings of the men rather than the dollar labor incomes.

The farmers whose standings for each year as shown in this table were all selected from the group of 25 Ohio farmers.

Farmer No. 1 ranked highest in the group of 25 farms in 1912, highest in 1913, second in 1914, third in 1915, third in 1916, and highest in 1917.

Farmer No. 2 for the respective years ranked 6th, 5th, 7th, 7th, 6th, and 8th.

Farmer No. 3 for the respective years ranked 23d, 24th, 22d, 24th, 25th and 25th.

The relative standing of each of these three was quite uniform from year to year, in fact, they are the most uniform men in the group of 25.

The others shown here varied somewhat in their relative standing for the different years.

Number 4 varied in rank from first in 1914 to eighth in 1912.

Number 5 from first in 1915 to eighteenth in 1917.

Number 6 from third in 1912 and 1914 to eighteenth in 1916.

Number 7 from first in 1916 to seventeenth in 1914.

Number 8 from eighth in 1913 to twenty-fifth in 1912.

If we care to look for the reasons for these variations in relative standing it affords a very interesting study—we think it one of the most interesting studies and one of most value in our continued surveys.

When the relative standing varies but 2 or 3 places it affords little of interest in studying the individual farmer from year to year, but when the relative standing varies 4 or 5, or 10 or 15 places in a group of 25 farms for different years we immediately become interested in determining the reasons therefor. Perhaps, were we unable to determine these reasons we should lose interest, but the fact is that in most instances we are able to ascertain with considerable accuracy wherein the farmer is more successful or less successful than he ordinarily is.

Let us look for a moment at Farmer No. 4. In 1912 he was eighth in relative standing, or lower than any other year. We find that year there was sickness in the family—his wife after long illness died, and his crop acreage was 12 per cent. less than any other year. In 1914 he was first in relative standing, and this year he increased his poultry flock and made good money on colts that he bought and afterwards sold. In 1915 he was sixth in relative standing and his income was reduced by the loss of a cow and a horse. In 1916 his relative standing was fifth, and his wheat index was lower than in any other year.

Take Farmer No. 5. In 1912 his rank was seventh, and he ranked lower among his neighbors in wheat yield per acre than he usually did. In 1913 he ranked higher in wheat yield per acre than ordinarily, and his hogs fed out exceptionally well. In 1914 he dropped lowest in hay yield per acre, which gave him a crop index of 104 against 113 the next lowest year. In 1916 he went below his ordinary standing in yield per acre of corn. In 1917 we find the greatest variation. This year he contracted steers for winter feeding on a cent-a-pound advance. His neighbors who fed steers sold at an advance of 2 to 3 cents per pound over purchase price. His laconic expression when getting his record for 1917 was "Never again."

Number 6 dropped very low in 1916. He had a high priced team of work horses which went blind, and he stood lower in rank in yield per acre of wheat than any other year.

Number 7 dropped quite low in relative standing in 1914. He is one of the best wheat growers of the 25 farmers. I mean he obtains comparatively high yields per acre in which he usually ranks first or second, but in 1914 he ranked thirteenth in wheat yield per acre. He also ranked much lower in yield per acre of corn than ordinarily. It will be observed that Number 7 ranked better the latter years than in earlier years. This is explained in a general way by his type of farming. His main sources of receipts are sheep and wheat, the price of wheat and wool advanced more than some other products, and he was usually able to obtain better prices than his neighbors—mainly on account of the time he sold.

Number 8 had just begun farming in 1912, and had scarcely established himself in the business. In 1913 he rented additional land and had larger crop acreage than other years. After 1913 he had rather uniform crop acreage and there is not a great deal of variation in his relative standing.

We believe these illustrations should be sufficient for establishing that there must be considerable variation in the incomes of individual farmers, even though the incomes of entire groups from year to year may be fairly constant. The other seventeen farmers in the Ohio group show as much variation as those we have been considering, and either the Wisconsin or Indiana area tells the same story.

SELECTING THE BEST FARMS IN AN AREA FROM A SINGLE-YEAR'S STUDY.

In the earlier years of farm management surveys, we were taught that the casual observer, or for that matter, one trained in analyzing the business of farmers, could not select the best farmers in an area by observations on the general surroundings. Our experience in farm management survey work confirms this, and our experience in the study of farms for successive years leads us to believe that even after a single year's study, there is considerable chance for error in selecting the best farmers, as determined by those with highest average labor incomes over periods of five or six years.

The reason for this chance of error is obvious, since most individual farmers show considerable variation from year to year, and our study along this line leads us to question the value of ranking farmers, individually or in very small groups, with only a single year's study. (Table VII.)

Table VII shows our investigations along this line in the Ohio, Wisconsin and Indiana areas. Perhaps we will be able to present the

subject more clearly if we assume there are 100 farms in our study. Now, if any year we select the 10 farms with highest labor incomes, we may expect only 4.5 of these 10 will be among the 10 with highest average labor incomes over a five- or six- year period. In other words, our selection is only 45 per cent. reliable. If we select the 20 farms with highest labor incomes our selection is 61 per cent. reliable; if we select 30 of the 100 farms our selection is 64 per cent. reliable; if we select 40 farms our selection is 70 per cent. reliable; and if we select 50 farms or one-half of them, our selection is 76 per cent. reliable. We believe this emphasizes the importance of using wide groupings of farms when we have but a single year's study, and that in many instances the study of an individual farm for a single year will only lead to erroneous conclusions.

TABLE VII.—*Reliability in the selection of best farmers as indicated by their labor incomes for a single year in the Ohio, Wisconsin and Indiana areas.*

| Percentage Groups of all Farmers Selected as Best in a Single Year's Studies, Per Cent. | Degree of Reliability of Single Year Selection as Determined by Average Labor Incomes Over a Period of Years, Per Cent. |
|---|---|
| 10 | 45 |
| 20 | 61 |
| 30 | 64 |
| 40 | 70 |
| 50 | 76 |

It was of interest to us in trying to find an indication as to the number of years that it might be well to conduct studies of individual farms. So an experiment was made with the relative standing in labor incomes of the 25 men in the Ohio area over a six-year period. We determined the rank in labor income of each farmer for 1912, the first year of the study. Then we determined the rank of each for the average of 1912 and 1913, or a two-year average, then the three-year average, and so on to the six-year average.

When comparing the standing as determined by the first year and the two-year average, we find there were 21 farmers whose relative standing was changed, when comparing the two-year and the three-year average, there were 18 whose relative standing was changed, and when comparing the five-year and the six-year averages, there were 15 whose relative standing was changed. As we said a while ago, we are little concerned when the relative standing varies but one or two places. When allowing for a variation of two places each time, instead of using the identical standings we find there were fourteen farmers who changed their relative standing when comparing

one-year with the two-year average, twelve when comparing the two-year and the three-year average, and only four changed relative standing more than two places when comparing the five-year and the six-year averages.

INCREASING SIZE OF BUSINESS.

It is a well-established principle that the size of business is one of the leading factors affecting farm profits. This principle has been emphasized in practically all the presentations of farm management surveys. But we have sometimes heard the criticism that it has been emphasized to such an extent, that whether intentionally or otherwise, it may sometimes carry to the reader that every farmer should increase the size of his farm. Perhaps this criticism is well-founded, and our continued surveys show that not every farmer who has increased the size of his farm has been able to increase his labor income, or his relative standing among his neighbors. The ability of the individual farmer is of prime importance. For instance, the first consideration for an 80-acre farmer in the Corn Belt who is making a lower labor income than his neighbors on farms of equal size is making good on his 80, rather than getting more land.

SINGLE YEARS' STUDIES VERSUS CONTINUED STUDIES.

The results of our surveys carried on over a period of years on the same farms do not in any way conflict with or discredit the one-year studies. In fact in a study of the broad economic principles affecting an agricultural area or type of farming, the single year surveys probably have the greater value in that a larger number of farms can be studied than is practicable in the continued work.

There are, however, a number of well-recognized types of farming carried on in different sections of the country such as, the fruit farming area of Virginia, the trucking districts of Florida, the citrus fruit districts, the dry farming districts of the West, etc., where it is nearly impossible to obtain results for one year that will give a true status of conditions prevailing over a period of years and in covering a study of the economic phases under such conditions, the work when carried over a period of years has a much greater value.

The continued work also has an added advantage over the one-year study, when carried on for any given area, of giving reliable information regarding the trend of agricultural development.

DISCUSSION OF PAPER BY H. W. HAWTHORNE.

F. D. Gardner: The bottom of Table I is very significant. Is the increase in labor incomes due to war conditions? Did the influence of the continuous survey itself have anything to do with the increased labor incomes?

Mr. Hawthorne: The farmers increased their business by speeding up in production as shown in Table IV. As to the influence of the surveys themselves in increasing the labor income, of course, I would not like to say. We know, however, that farmers study the reports of the analysis of their own farm business which we return to them each year, and that they have such interest in the bulletins published as to request copies sent to friends in neighboring localities.

L. A. Moorhouse: Why did No. 3 make such a consistently poor record?

Mr. Hawthorne: Because he was a consistently poor farmer. Farmer No. 1 made the highest average labor income for the six-year period, and Farmer No. 3 the lowest. There is less than ten acres difference in the size of their farms, but Farmer No. 3 had a smaller crop acreage and carried much less live stock than Farmer No. 1. He also had poorer crop yields and received lower returns from his live stock. He had comparatively poor quality and he simply lacked the ability to conduct a successful farm business. He is a well read man, a good conversationalist and all that but it is not in him to make good.

Mr. Gardner: What is the range of labor income from these farms?

Mr. Hawthorne: The six-year average for Farm No. 1 was around \$800; for Farm No. 3 a minus \$200.

K. C. Livermore: Can you tell us the relative size of the business on the high and low labor income farm?

Mr. Hawthorne: Not exactly. Approximately, the crop acreage was one-half larger and the amount of live stock three times greater on the high labor income farm than on the low labor income farm.

Mr. Livermore: If No. 1 goes on to No. 3's farm would he enlarge the business?

Mr. Hawthorne: Certainly.

E. H. Thomson: What is your experience as to the number of records farmers are keeping where continued surveys are being carried on? After the first year or two are more men able to give records from books?

Mr. Hawthorne: There is quite an increase in the number of these men who are keeping books. I was agreeably surprised in the Ohio

area this fall to find some farmers who had summarized the year's business, and we were all able to obtain more of the sales and of the expenses from books than in the early years of the survey. A study of these farms in Ohio and Indiana areas shows that more farmers are keeping accounts in the later than in the earlier years of the surveys.

EDUCATION.

"It may be that Federal aid will be extended to the public school system. If this time ever comes we should see to it that the Federal money comes through the states so that the school system cannot be dominated by a Federal Bureau. The Federal supervision should be limited to seeing that the funds are used for education. There should be no Federal power to dominate the schools or use them for propaganda purposes. The nearer local government is left to local agencies the greater the return per dollar spent and the greater the growth in ability in democratic government."

G. F. WARREN.

INVESTIGATIONAL NOTES.¹

Some important changes have been made recently in the personnel and work of the Office of Farm Management, United States Department of Agriculture. Up to the present writing the following men have been chosen to head important work in this office: Dr. H. C. Taylor, for a number of years Professor of Agricultural Economics at Madison, Wisconsin, has been appointed Chief; Mr. Asher Hobson of Pullman, Washington, has been appointed Assistant Chief; Mr. F. W. Peck of the Minnesota Agricultural Experiment Station; St. Paul, Minnesota, has been placed in charge of the Cost of Production Investigations; Dr. L. C. Gray of Peabody Institute, Tennessee, heads the Division of Land Utilization; and Mr. Charles J. Galpin of Madison, Wisconsin, will be in charge of Country Life Studies.

The Office of Farm Management has recently concluded a repetition Farm Management Survey in Sumter County, Georgia, and in Catawba County, North Carolina. These surveys have been made five years apart and the studies have been of absorbing interest in indicating the changes that have occurred in the system of farming in this five-year period.

Cost of cotton studies are being made by the Office of Farm Management, United States Department of Agriculture, in representative areas in Texas, Georgia, Alabama and South Carolina.

A coöperative cost of tobacco project with the Kentucky Experiment Station has been arranged by the Office of Farm Management, and field men are now at work studying the fundamental basic unit factors of cost in typical areas of Kentucky.

The Illinois Experiment Station has recently formed a department of Farm Organization and Farm Management headed by W. F. Handschin. The Texas Experiment Station has also organized a department of Farm and Ranch Economics in charge of H. M. Elliott. The Utah Experiment Station announces that E. B. Brossard is to be in charge of Farm Management work in that Institution. There seems to be a steadily increasing interest in Farm Management and Farm Economic investigations in the various State institutions.

¹ The editor will welcome letters containing news notes relating to progress of farm management work in various state institutions.

The Minnesota Experiment Station is planning a Land Settlement Investigation looking towards methods of land colonization and settlement in cut over areas in Northern Minnesota. At the present time this work is coöperative between the Division of Agronomy and Farm Management and the Division of Agricultural Economics of the above institution.

The College of Agriculture at Cornell University is making an exhaustive investigation on the cost factors in milk production through the Department of Farm Management in charge of Professor G. F. Warren. Mr. Misner is in direct charge of the field work.

The Office of Farm Management, United States Department of Agriculture, has recently completed a two year's study of small farms near the cities of Columbus, Ohio, Cleveland, Ohio, and Indianapolis, Indiana.

At the recent cotton conference held at New Orleans a \$100,000,000 cotton Export Corporation was formed to aid in procuring markets in the foreign countries for the consumption of American-grown cotton. This appears to be a constructive step to increase the marketing facilities for the growers of cotton.

EXTENSION NOTES.

Mr. Allen W. Manchester, formerly county agent of Litchfield County, was appointed and assumed duty as Farm Management Demonstrator for Connecticut on December 16 last.

The New Hampshire College of Agriculture secured the services of Mr. Albert B. Genung, who assumed the duties of Farm Management Demonstrator on December 16, 1918.

Mr. Wesley H. Bronson resumed his duties as Farm Management Demonstrator in Massachusetts after having served a war-time enlistment in the Navy.

Messrs. L. J. Norton and E. C. Young were appointed on February 1 and April 1, respectively, as Assistant Farm Management Demonstrators in New York State.

Mr. Charles P. Clark resigned his position as Assistant Demonstrator in New York State on March 31 to take up farming.

Mr. Paschal K. Whelpton, formerly Scientific Assistant in the U. S. Department of Agriculture at Washington, began his duties as Farm Management Demonstrator in Nebraska on February 21 last.

Assistant Farm Management Demonstrator W. E. Stone of Indiana resigned on February 28 to take up work as County Agent in Ohio.

After several months in military service, Mr. Adolph N. Nathan, Farm Management Demonstrator in California, and Mr. Arthur E. Miller, Assistant Demonstrator in South Dakota, have resumed duty in their respective States.

Farm Management Demonstrators Allen W. Manchester of Connecticut, and Lynn S. Robertson of Indiana, attended a conference on farm organization held at Washington, D. C., in April.

EXCERPT FROM MINUTES OF BUSINESS MEETING, JANUARY,
1919.

The committee appointed to consider and report on the question of changing the name of the Association reported previous to the business meeting. The report recommended that the name be changed to "The American Farm Economic Association." It was moved that this change be made. An amendment to this motion, substituting the name "The American Farm Economic and Farm Management Association," was lost. After careful discussion the original motion was passed by more than the two-thirds vote necessary for changing the constitution.

The report of the committee on formation of sections within the Association was read previous to the business meeting. No action was taken on this question.

The committee on change of constitution consisted of G. F. Warren of New York, chairman, Frank App of New Jersey, and L. A. Moorhouse of Washington, D. C. After discussing the report of this committee, several changes were made in the constitution by the two-thirds or greater vote required for such changes. The constitution as amended and changed stands as follows (old text removed in parentheses and new text in italics) :—